

SYSTEMS, PROCESSES AND INTEGRATED CIRCUITS FOR RATE AND/OR DIVERSITY ADAPTATION FOR PACKET COMMUNICATIONS

ABSTRACT

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A process (111,101) of sending packets of real-time information at a sender (311) includes steps of initially generating at the sender the packets of real-time information with a source rate (s_{11}) greater than zero kilobits per second, and a time or path or combined time/path diversity rate (d_{11}), the
10 amount of diversity (d_{11}) initially being at least zero kilobits per second. The process sends the packets, thereby resulting in a quality of service QoS, and optionally obtains at the sender (311) a measure of the QoS. Rate/diversity adaptation decision may be performed at receiver (361') instead. Another step compares the QoS with a threshold of acceptability (Th_1), and when the
15 QoS is on an unacceptable side of said threshold (Th_1) increases the diversity rate (d_{11} to d_{22}) and sends not only additional ones of the packets of real-time information but also sends diversity packets at the diversity rate as increased (d_{22}). Increasing the diversity rate (d_{11} to d_{22}) while either
20 reducing or keeping unchanged the overall transmission rate ($s_{ij}+d_{ij}$) is an important new improvement in even solely-time-diversity embodiments. In another form of the invention a single-chip integrated circuit includes a processor circuit (1511), and a rate-and-diversity control (1561). Here again,

the diversity is contemplated to be time diversity, path diversity, and combined time/path diversity in various embodiments. Other embodiments disclosed encompass other processes, improved packets and packet ensembles, integrated circuits, chipsets, computer add-in cards, information
5 storage articles, systems, computers, gateways, routers, cellular telephone handsets, wireless base stations, appliances, and packet networks, and other forms as claimed.